

AMENDMENTS TO THE CLAIMS

Please enter the following amendments:

1 – 13. (Canceled)

14. (Currently Amended) An absolute difference processor comprising
first and second stochastic pulse generators each comprising
a ~~stochastic pulse generator as recited in claim 1~~ variable signal generator
operative to generate a variable signal which varies randomly, and a comparator operative to
output a binary signal of High or Low depending on which of one input signal and another input
signal is larger or smaller than the other, wherein
when the variable signal is inputted as said one input signal to the comparator
from the variable signal generator, the comparator stochastically outputs pulses, the number of
which corresponds to a magnitude of said another input signal; and
an exclusive-OR circuit for outputting an exclusive-OR of an output of the first stochastic
pulse generator and an output of the second stochastic pulse generator; wherein
when said another input signal and the variable signal which are inputted to the first
stochastic pulse generator are V_{S1} and V_{C1} , respectively, while the output of the first stochastic
pulse generator is V_{O1} , and said another input signal and the variable signal which are inputted to
the second stochastic pulse generator are V_{S2} and V_{C2} , respectively, while the output of the
second stochastic pulse generator is V_{O2} , the variable signals V_{C1} and V_{C2} are the same variable
signal:

thereby obtaining an absolute difference between the value of said another input signal V_{S1} and that of said another input signal V_{S2} in the form of a number of stochastic pulses comprising the exclusive-OR.

15. (Original) The absolute difference processor according to claim 14, wherein the stochastic pulses comprising the exclusive-OR are generated with a pulse generation probability which lowers with decreasing absolute difference between the value of said another input signal V_{S1} and that of said another input signal V_{S2} .

16. (Original) The absolute difference processor according to claim 14, wherein the variable signals V_{C1} and V_{C2} are generated to repeat the same progression.

17. (Original) A Manhattan distance processing apparatus comprising a plurality of absolute difference processors as recited in claim 14 which are connected in parallel with the single variable signal generator, wherein

signals corresponding to elements of respective of two vectors each having the elements, a number of which corresponds to the number of the absolute difference processors, are inputted as said another input signal V_{S1} and said another input signal V_{S2} to each of the absolute difference processors,

thereby obtaining a Manhattan distance between the two vectors in the form of number of stochastic pulses.

18. (Canceled).